

SIEMENS

Opdima®

SP

Wiring Diagram

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This document shows the electrical connections, electrical components and test points within the Opdimas[®] system.

Documents required

The following document is referred to in this manual:

- MAMMOMAT *Novation*^{DR} Wiring Diagrams
- MAMMOMAT 1000/3000 Nova Wiring Diagrams

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General - MAMMOMAT *Novation*^{DR}

The digital biopsy and spot imaging system Opdima[®] is an option to the MAMMOMAT *Novation*^{DR}.

Opdima[®] consists of:

- Workstation
- Biopsy controller
- CCD camera

The biopsy controller is the central unit for the cable connections in the Opdima[®] system.

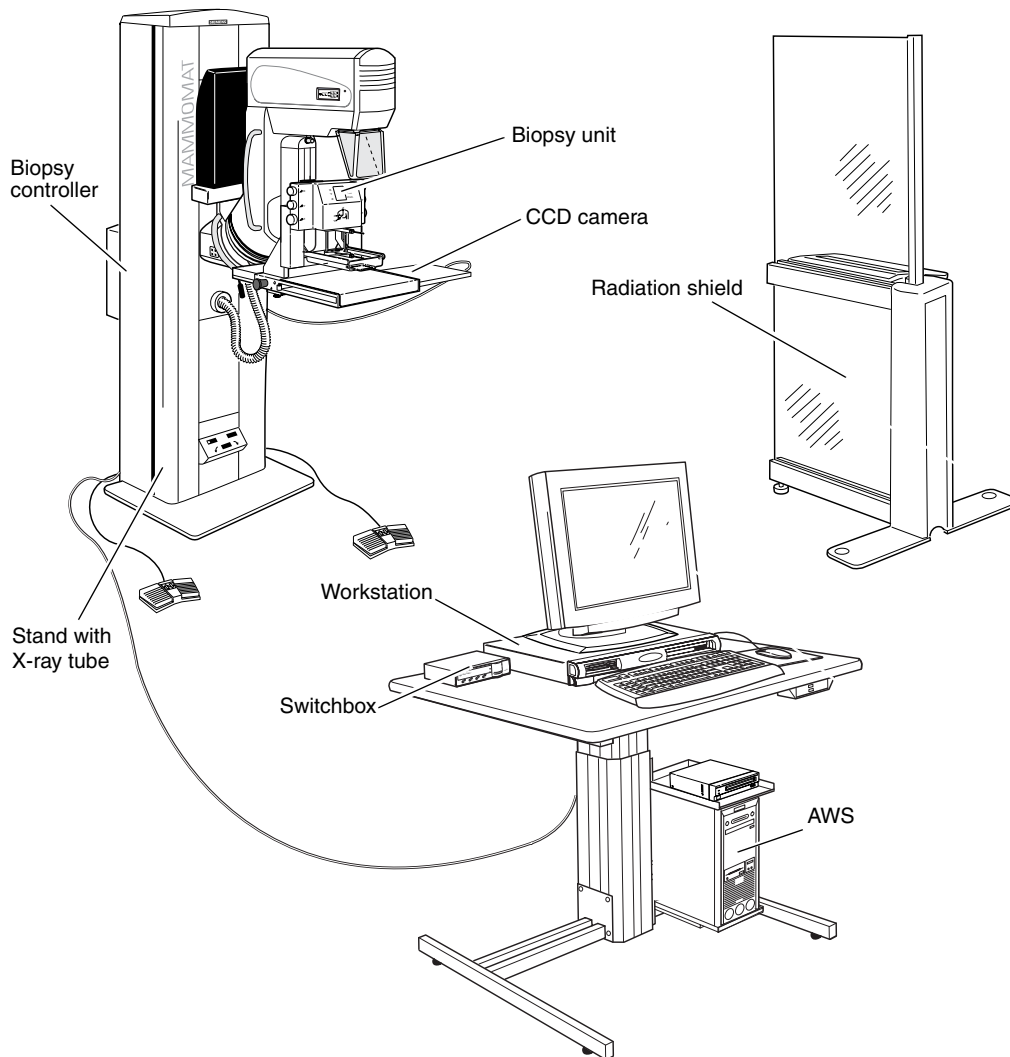


Fig. 1 Opdima[®] subassemblies with a MAMMOMAT *Novation*^{DR}

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General - MAMMOMAT 3000

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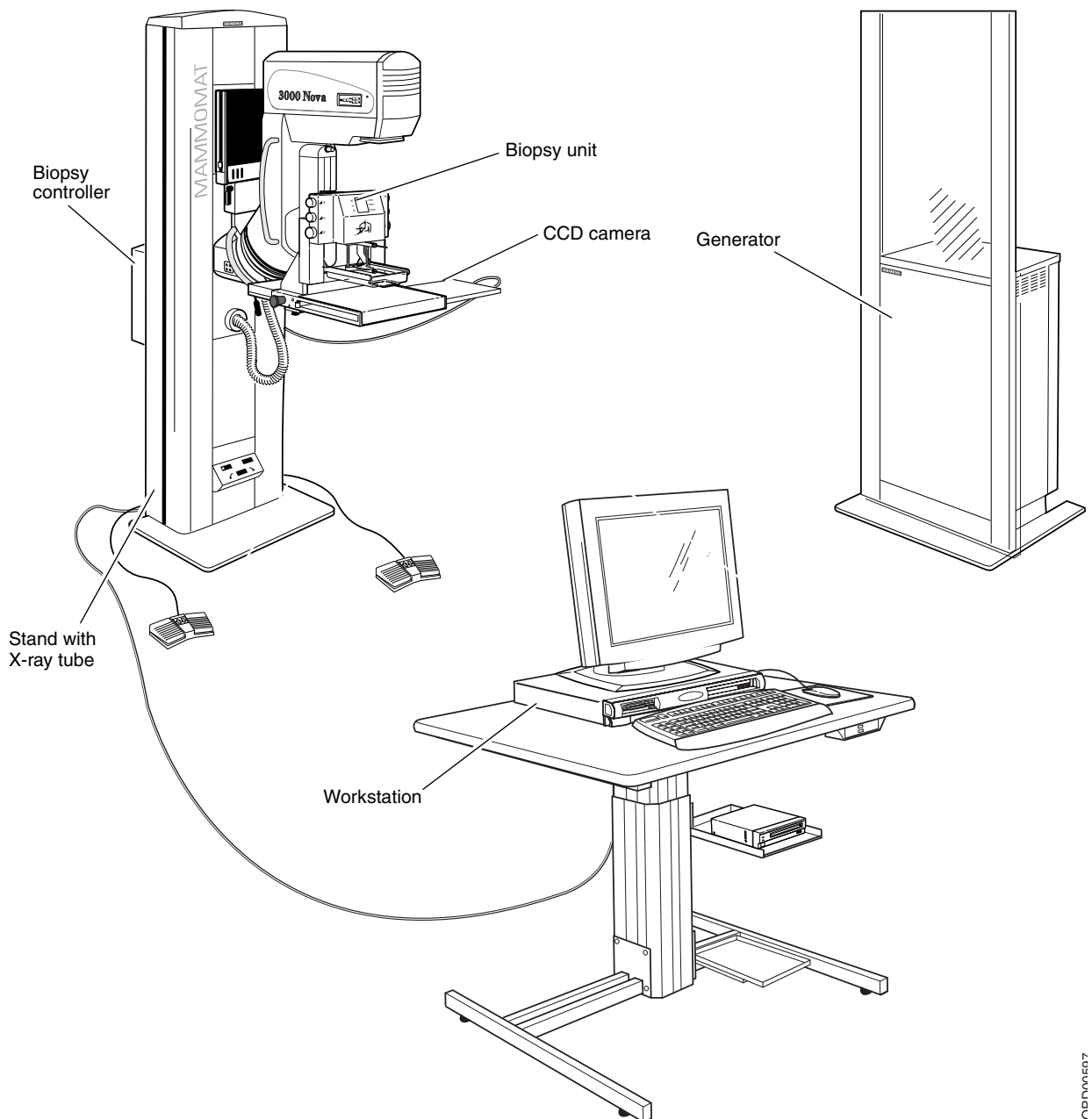


Fig. 2 Opdima® subassemblies with a MAMMOMAT 3000

Location of components

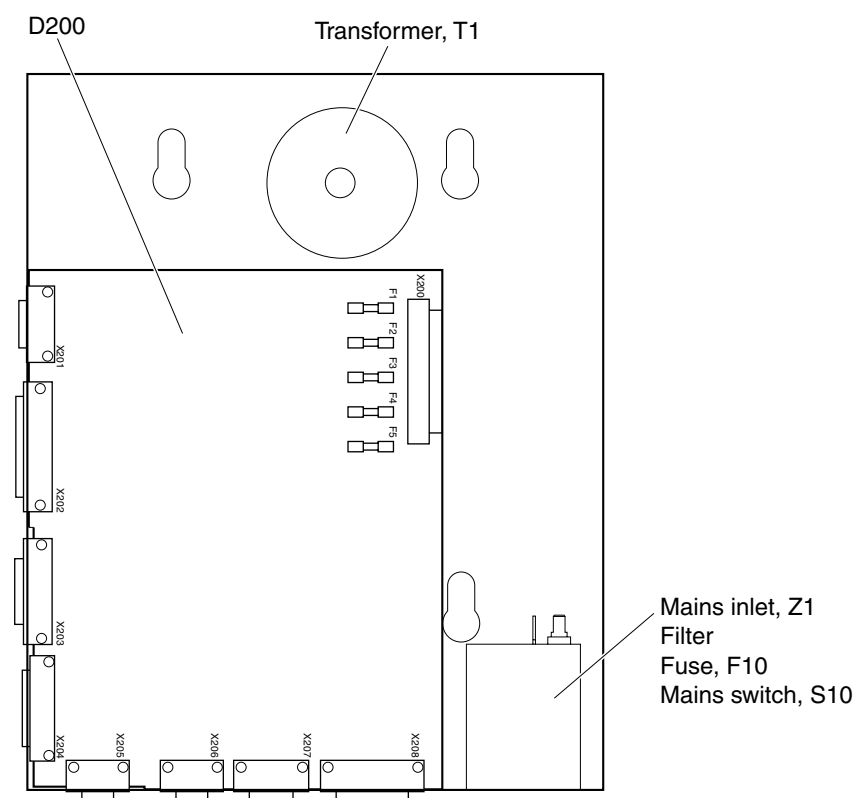


Fig. 3 Biopsy controller, inside

Front panel description

Position	Explanation
1	Power switch
2	Power-indicator LED
3	Smart card reader (not used in Opdima)
4	3.5-inch diskette drive (not used in Opdima)
5	5.25-inch CD drive

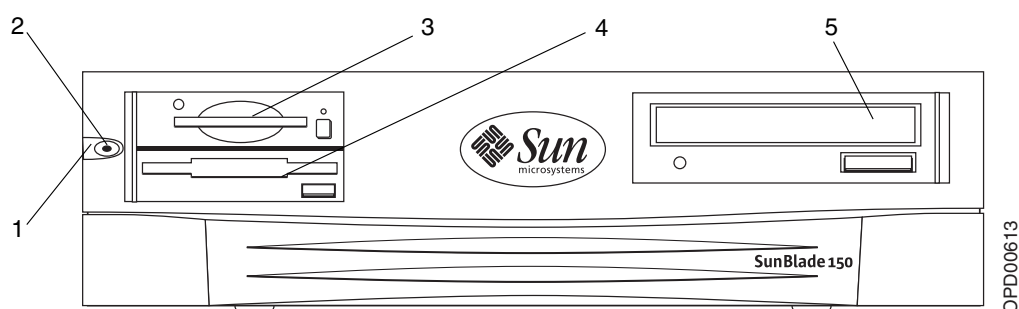








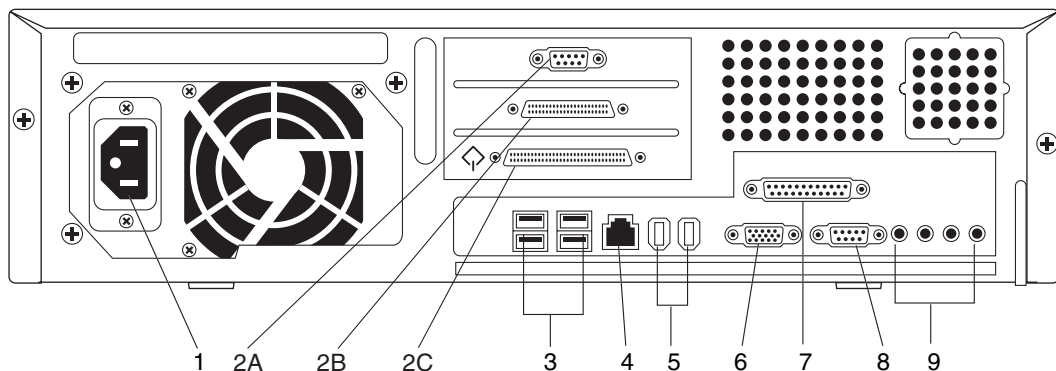


Fig. 4 Workstation main unit, front panel overview

Back panel description and connector symbols

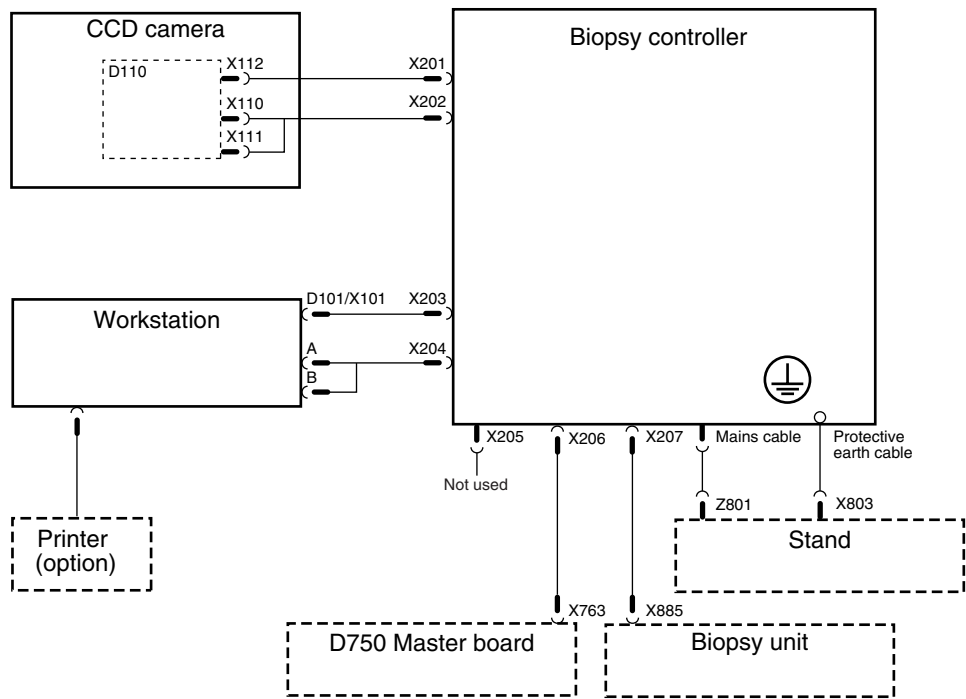
Position	Explanation	Connector symbols
1	Mains power supply	None
2A	Biopsy controller interface (X204)	PCI-3
2B	Camera interface via biopsy controller (X203)	PCI-2
2C	SCSI interface	PCI-1
3	Universal serial bus (USB) connectors (four) (keyboard and mouse interface to switchbox, if MAMMOMAT <i>Novation</i> ^{DR} is used)	
4	Network connector	
5	Not applicable (IEEE 1394 (two) connectors), not used	
6	Monitor interface (to switchbox, if MAMMOMAT <i>Novation</i> ^{DR} is used)	
7	Parallel port to local printer	//
8	Mammomat interface via biopsy controller (X204)	SERIAL
9	Audio module headphones connector, not used	
9	Audio module line-out connector, not used	
9	Audio module line-in connector, not used	
9	Audio module microphone connector, not used	



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Fig. 5 Workstation main unit, back panel overview

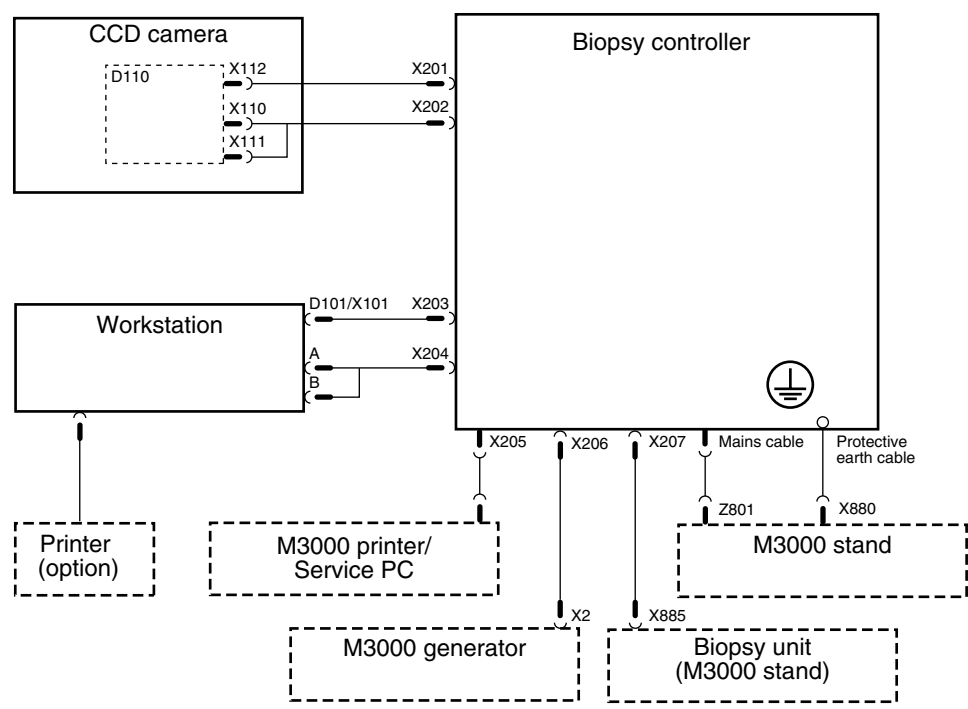
Cable connections - MAMMOMAT *Novation*^{DR}



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Fig. 6 Cable connections - MAMMOMAT *Novation*^{DR}

Cable connections - MAMMOMAT 3000



OPD00464

Fig. 7 Cable connections - MAMMOMAT 3000

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Block diagram - MAMMOMAT Novation^{DR}

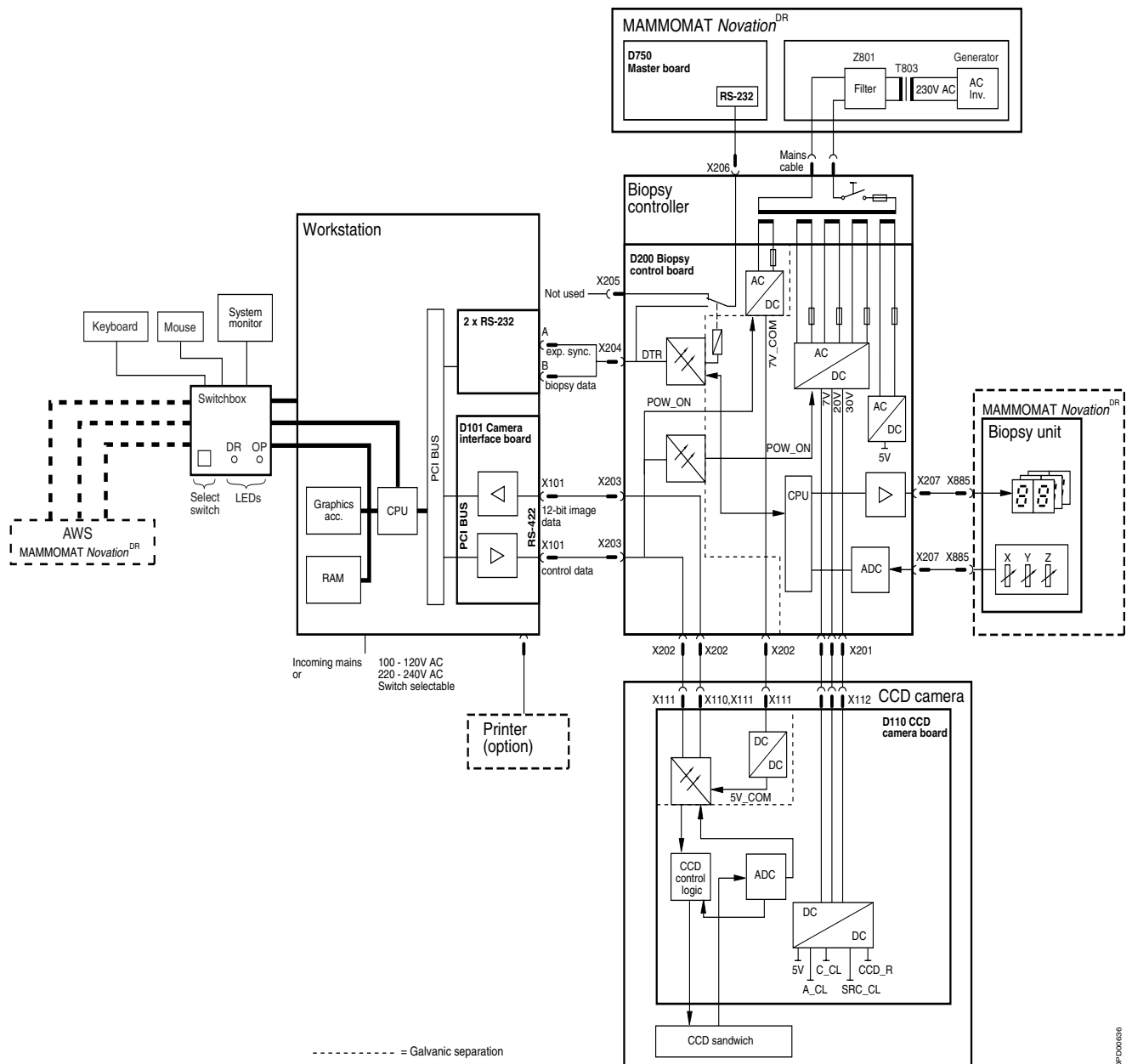


Fig. 1 Block diagram - MAMMOMAT Novation^{DR}

OPD000006

Block diagram - MAMMOMAT 3000

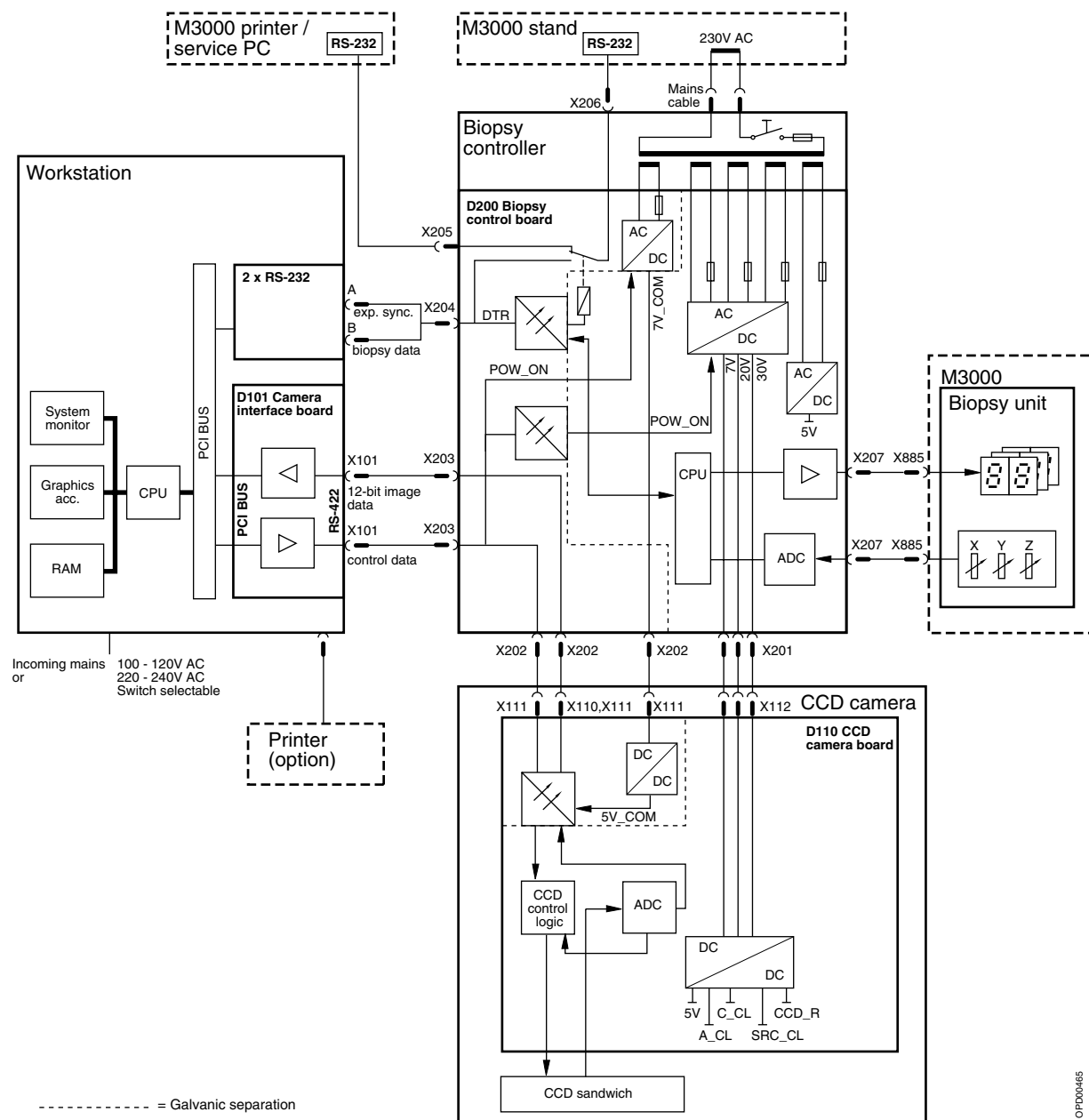


Fig. 2 Block diagram - MAMMOMAT 3000

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Power supply and ground connections - MAMMOMAT Novation^{DR}

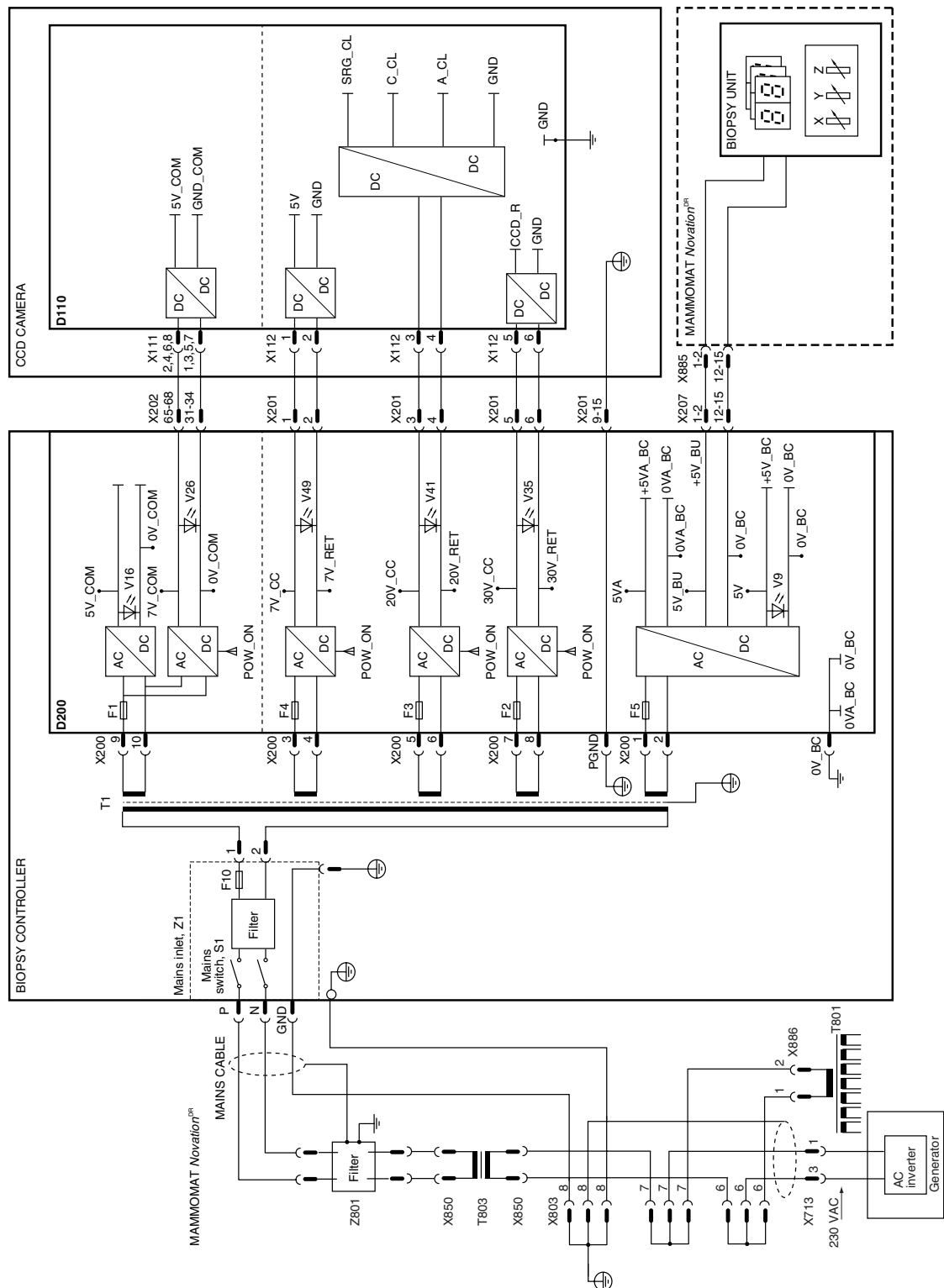


Fig. 3 Power supply and ground connections - MAMMOMAT Novation^{DR}

Power supply and ground connections - MAMMOMAT 3000

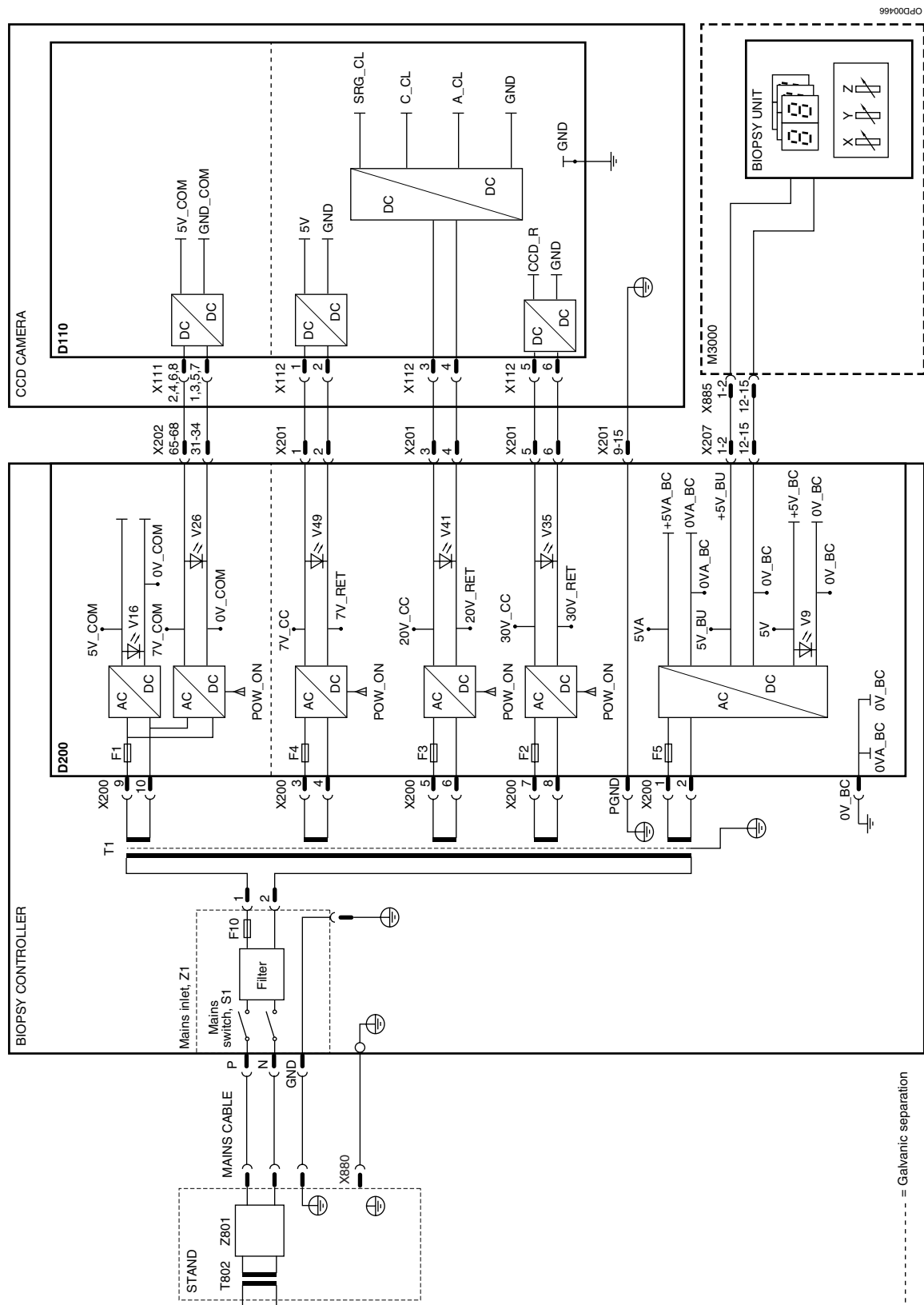


Fig. 4 Power supply and ground connections - MAMMOMAT 3000

Biopsy unit potentiometers/display - Both M3000 and MAMMOMAT Novation^{DR}

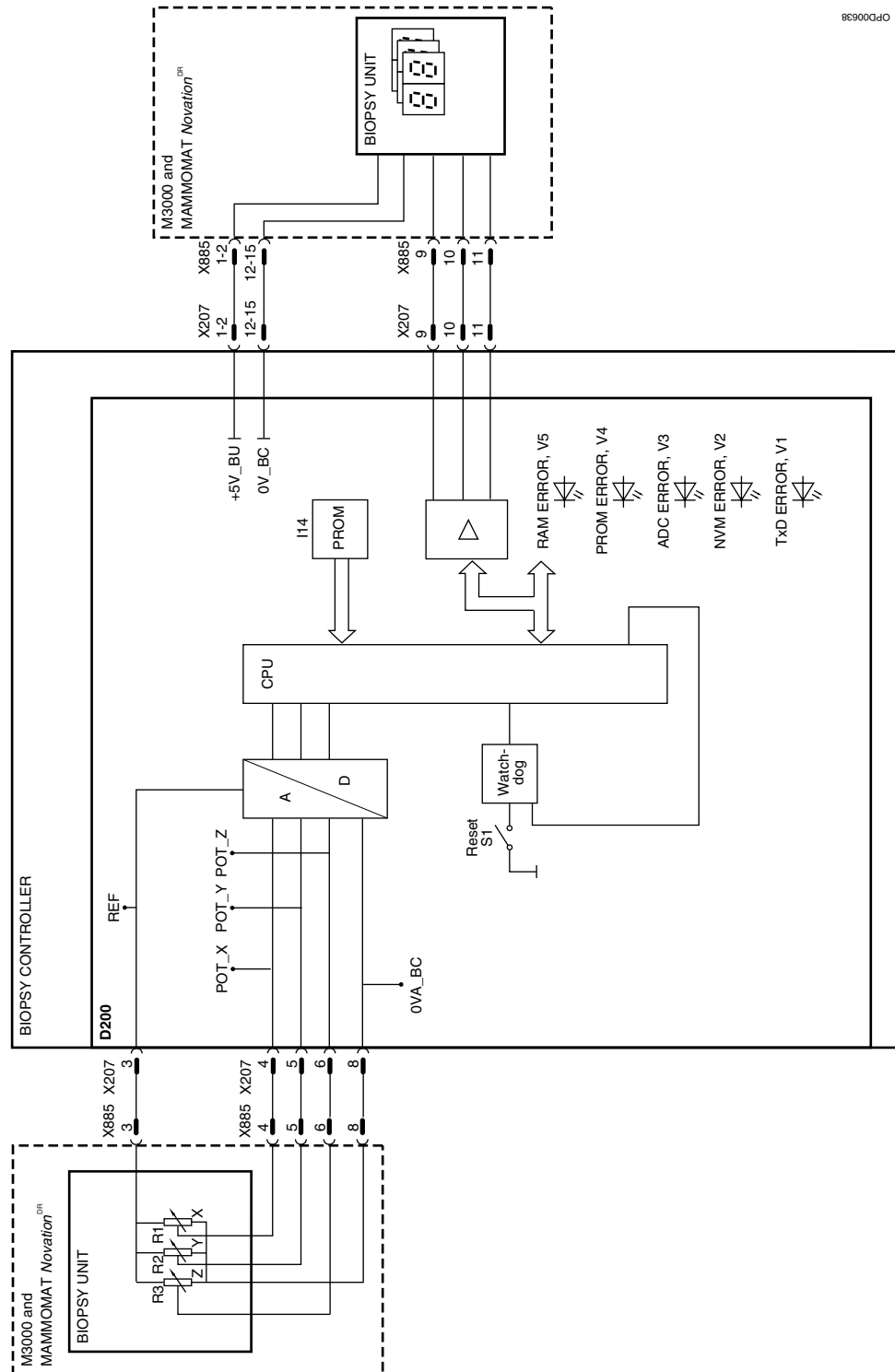


Fig. 5 Biopsy unit potentiometers/display both M3000 and MAMMOMAT Novation^{DR}

CCD camera and RS-232 communication - MAMMOMAT Novation^{DR}

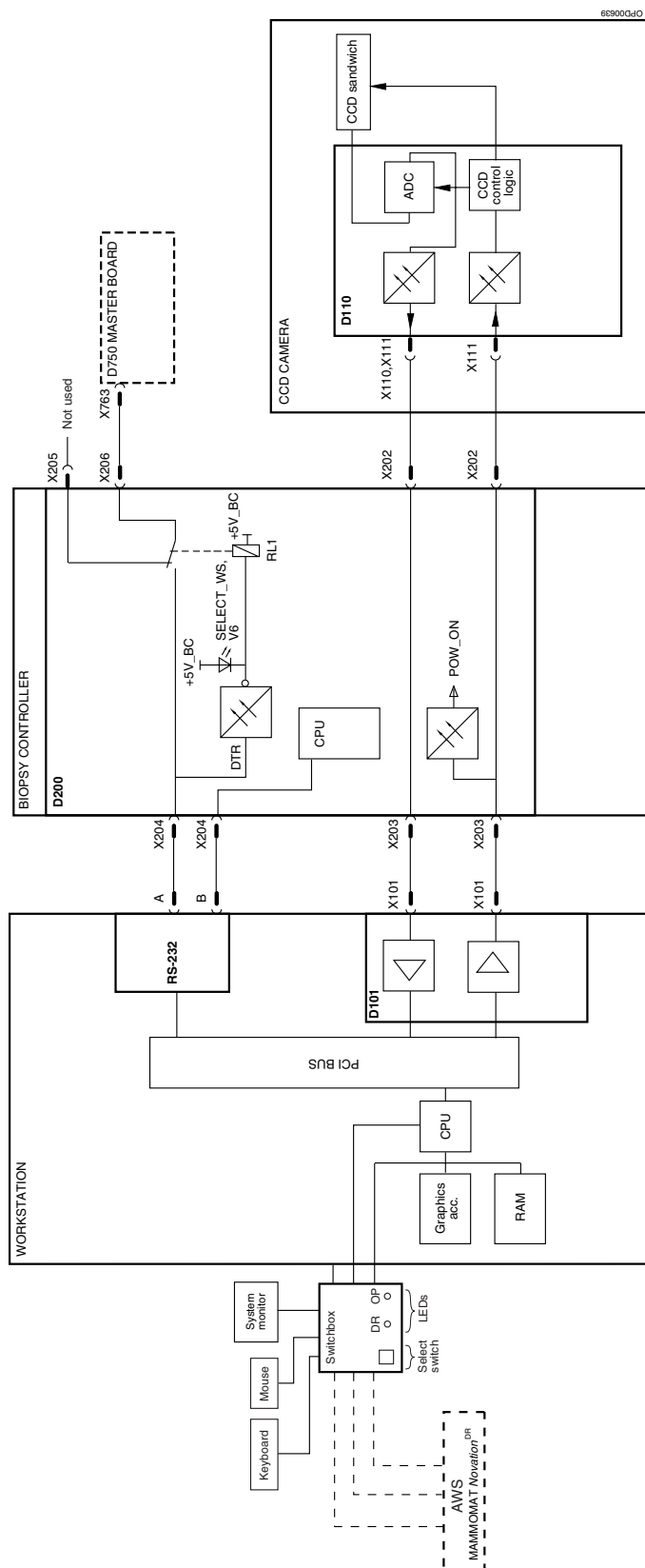


Fig. 6 CCD camera and RS-232 communication - MAMMOMAT Novation^{DR}

CCD camera and RS-232 communication - MAMMOMAT 3000

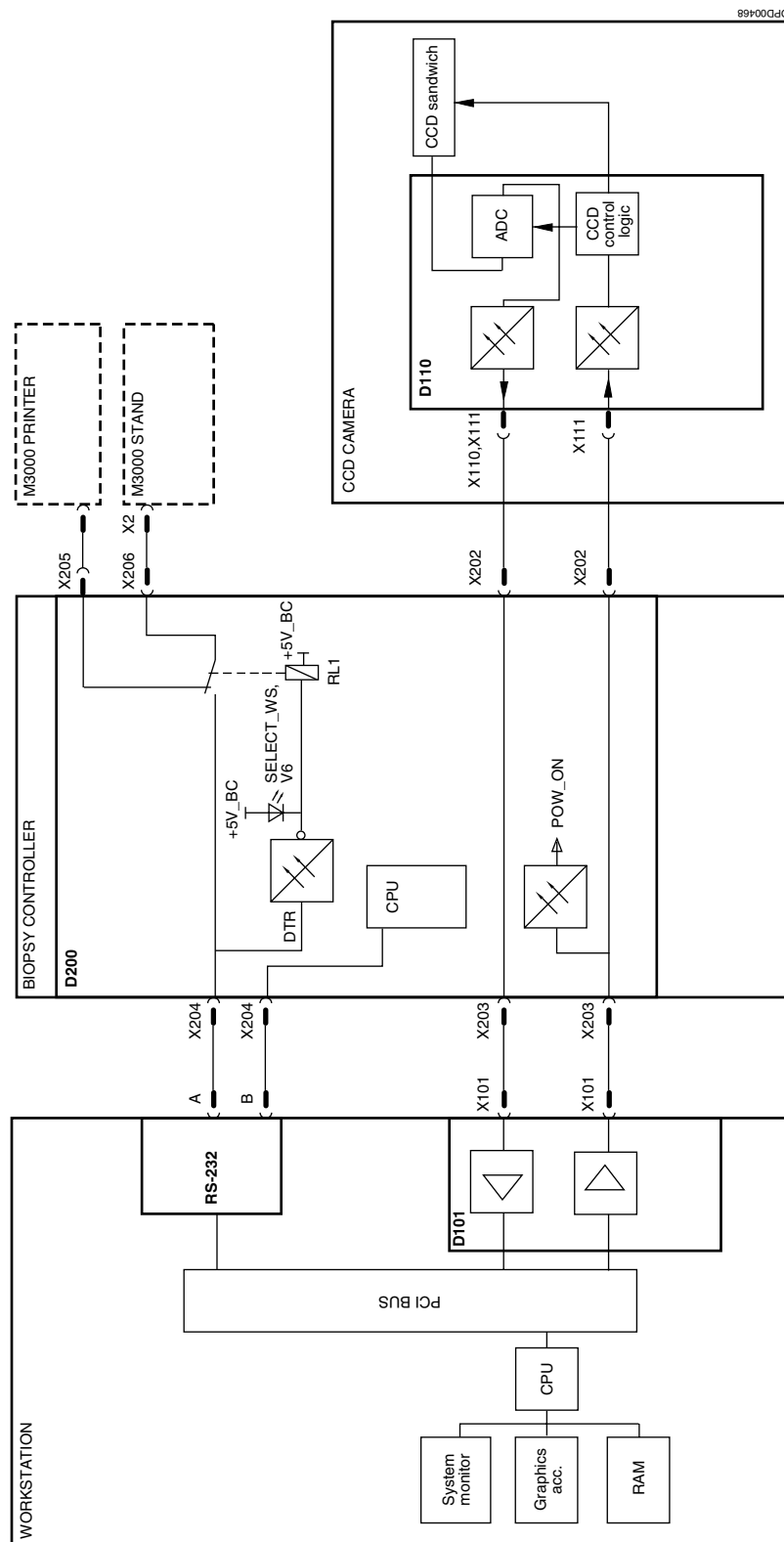


Fig. 7 CCD camera and RS-232 communication - MAMMOMAT 3000

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Fuses

Component	Description	Location
F1	1.6AT / 250V (7V_COM)	D200
F2	0.5AT / 250V (30V_DC)	D200
F3	1AT / 250V (20V_DC)	D200
F4	1.6AT / 250V (7V_DC)	D200
F5	1AT / 250V (5V_BC)	D200
F10	1AT / 250V (230VAC)	Mains switch, S10
F1	1.5A / 30V (not replaceable)	D101

Printed circuit boards

Component	Description	Location
D200	Biopsy control board	Biopsy controller
D101	Camera interface board	Workstation
D110	Camera control board	CCD camera

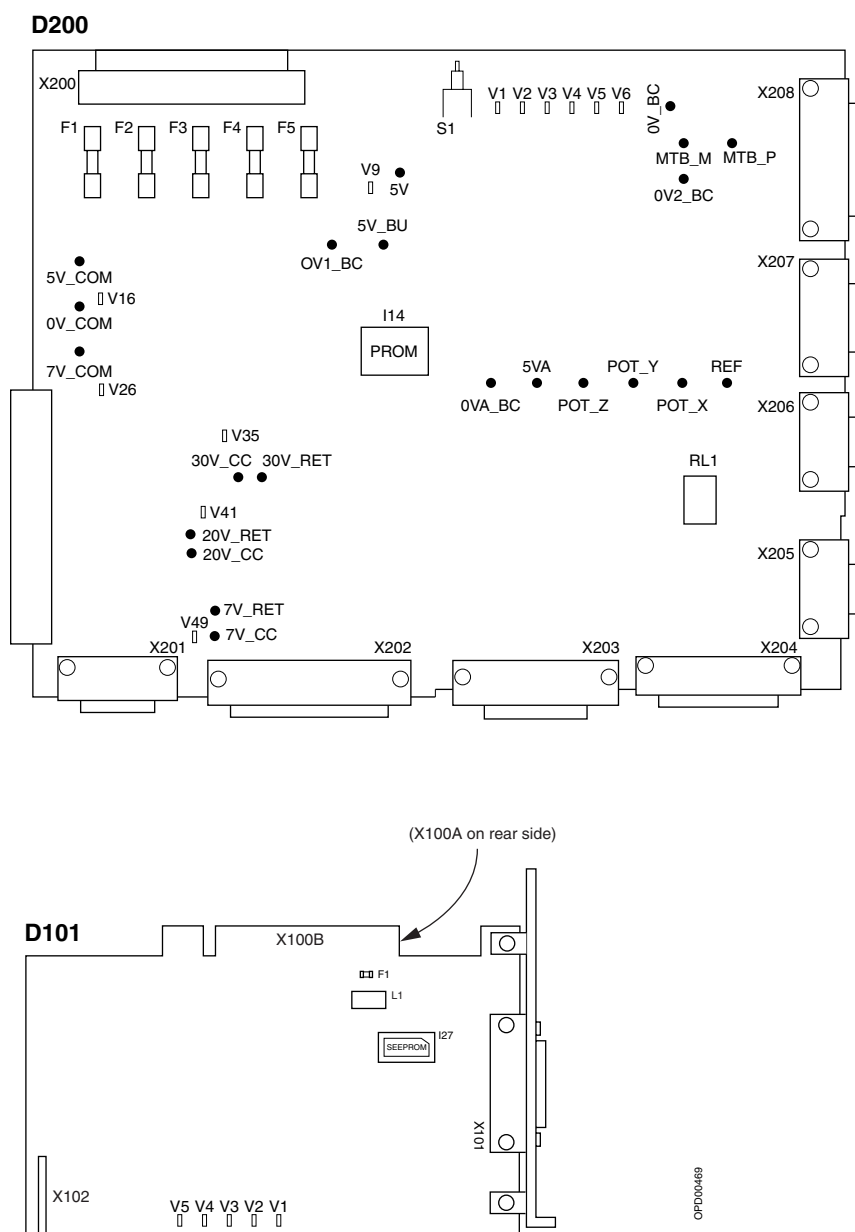


Fig. 1 Printed circuit boards, test points and components

Potentiometers

Component	Description	Location
R1	Measurement of x-deviation	Biopsy unit
R2	Measurement of y-deviation	Biopsy unit
R3	Measurement of z-deviation	Biopsy unit

Miscellaneous

Component	Description	Location
Z1, S10	Filter with mains switch	Biopsy controller
T1	Mains transformer with thermal fuse	Biopsy controller
I14	PROM containing biopsy controller software	D200
S1	Reset switch, D200	D200
I27	Serial EEPROM containing device setup information	D101

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Test points

Telescoping	Location	Value	Signal/voltage description
5V	D200	4.75-5.25 V	5 VDC to biopsy controller
5VA	D200	4.75-5.25 V	5 V analog to biopsy controller
5V_BU	D200	4.75-5.25 V	5 VDC to biopsy unit
0VA_BC	D200	n/a	0V for 5VA
0V1_BC, 0V2_BC	D200	n/a	0 V for 5V and 5V_BU
5V_COM	D200	4.75-5.25 V	5 VDC to receiver
7V_COM	D200	6.85-7.55 V	7 VDC for communication circuits in CCD camera
0V_COM	D200	n/a	0 V for 5V_COM and 7V_COM
7V_CC	D200	6.85-7.55 V	7 VDC to CCD camera
7V_RET	D200	n/a	0 V for 7V_CC
20V_CC	D200	19.0-22.0 V	20 VDC to CCD camera
20V_RET	D200	n/a	0 V for 20V_CC
30V_CC	D200	28.5-33.0 V	30 VDC to CCD camera
30V_RET	D200	n/a	0 V for 30V_CC
POT_X	D200	0-REF	Analog voltage from the biopsy unit potentiometer R1 (x-axis)
POT_Y	D200	0-REF	Analog voltage from the biopsy unit potentiometer R2 (y-axis)
POT_Z	D200	0-REF	Analog voltage from the biopsy unit potentiometer R3 (z-axis)
REF	D200	2.0-3.0 V	Supply voltage for POT_X, POT_Y and POT_Z
L1	D101	4.75-5.25 V	5 VDC to D101 (after fuse F1/D101)

LEDs

LED	Location	Signal/voltage description
V2	D200	NVM error, CPU output pin
V1	D200	TxD error, CPU output pin
V3	D200	ADC error, CPU output pin
V4	D200	PROM error, CPU output pin
V5	D200	RAM error, CPU output pin
V49	D200	7V_CC, supply voltage
V35	D200	30V_CC, supply voltage
V9	D200	5V, supply voltage
V41	D200	20V_CC, supply voltage
V16	D200	+5V_COM, supply voltage
V26	D200	7V_COM, supply voltage
V6	D200	SELECT_WS, workstation selected for RS-232 communication with MAMMO-MAT 3000
V1	D101	FIFO almost empty
V2	D101	FIFO less (or equal) than half full
V3	D101	FIFO more than half full
V4	D101	FIFO almost full
V5	D101	FIFO full

Chapter	Page	Change
1	1	MAMMOMAT <i>Novation</i> ^{DR} Wiring Diagrams is added in the chapter Documents required. Since this update shall be valid for OPDIMA in conjunction with both MAMMOMAT <i>Novation</i> ^{DR} and MAMMOMAT 3000.
2	1	General description of MAMMOMAT <i>Novation</i> ^{DR} is new.
2	5	In position 3 and 6 information regarding the usage of switchbox together with MAMMOMAT <i>Novation</i> ^{DR} has been added.
2	6	Cable connections of MAMMOMAT <i>Novation</i> ^{DR} is new.
3	1	Block diagram of MAMMOMAT <i>Novation</i> ^{DR} is new.
3	3	Power supply and ground connections of MAMMOMAT <i>Novation</i> ^{DR} is new.
3	5	Biopsy unit potentiometers/display is valid for both MAMMOMAT <i>Novation</i> ^{DR} and MAMMOMAT 3000.
3	6	CCD camera and RS-232 communication of MAMMOMAT <i>Novation</i> ^{DR} is new.

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